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SOVIET AUTOMOTIVE INDUSTRIES

No. 32

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USSR Industrial Development  
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This serial publication contains translations of selected articles on the automotive industries in the Soviet Union, on the specific subjects indicated in the table of contents. Complete bibliographic information accompanies each article.

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## NEW VEHICLES FOR 1963

[Following is the translation of an article by A. Anders in the Russian-language magazine Avtomobil'nyy transport (Motor Vehicle Transport), Moscow, No 3, March 1963, pages 41-42.]

The work of scientific-research and planning and design organizations in fulfilling the 1963 national economic plan for new equipment will be conducted under the new conditions of centralized leadership of these organizations by State Committees for industrial branches. The decree of the November Plenum of the Central Committee of the CPSU, "Concerning the Development of the Economy of the USSR and Reorganization of the Party Leadership Over the National Economy", issued after a report by Comrade N.S. Khrushchev, is creating the conditions which will permit an improvement in the specialization of scientific-research and planning and design organizations in the creation of certain types of vehicles, and in increasing the effort for maximum unification of assemblies and parts.

The reorganization of design services at motor vehicle plants with a specialization of the main design bureaus in accordance with the types of motor vehicles in each class or within a range of load capacities, which is being presently introduced, should exert a positive influence upon the further rise of the technical level of our motor vehicle industry. The main design bureaus will have to be responsible for the development of motor vehicles of a given class and for a unification in the design of their assemblies, units and parts, because the variety of types of various assemblies and parts in vehicles of a similar load capacity complicates the organization of repair and operation of the motor vehicle pool.

The creation and perfection of new motor vehicle models for mass production is a drawn-out process requiring (including the time for reequipping the plant) more than a year of work by designers, technologists and the whole plant production staff. Consequently, the new directions of work

which will be given to the main design bureaus which are presently being established, will not be fully reflected in the new motor vehicle models, the GAZ-53, the ZIL-130, the MAZ-500 and others, which are presently being put into production, but will influence the implementation of work in accordance with the 1963 plan for new equipment.

The basis for the 1963 national economic plan for new equipment in the Motor Vehicle Industry, is essentially a continuation of the work begun in accordance with the 1962 plan. (Note: A. Anders, "The Motor Vehicle Industry in 1962", Avtomobil'nyy transport, 1962, No 2.)

The fundamental tasks of this year are directed towards the fullest possible satisfaction of the needs of the national economy for all types of transportation. In addition to work of creating large-capacity truck trains, a most important place in the 1963 plan is devoted in this connection towards measures of increasing the load capacity of Gor'kiy Motor Vehicle Plant vehicles, and towards the creation of a three-axle vehicle with a 6x4 wheel formula and an eight ton load capacity for use by the national economy, and of a saddle prime-mover on the same base for operation with a semi-trailer with up to 19 tons total weight, at the Moscow Motor Vehicle Plant imeni Likhachev. The Odessa Motor Vehicle Assembly Plant is working on the creation of a semi-trailer/van with a 15 ton capacity for this vehicle. In accordance with the plan, the Gor'kiy Motor Vehicle Plant has already in 1962 begun the production of the transitional 3.5 ton capacity GAZ-53F truck model. The production of this vehicle will continue in 1963.

With the start of production of the new V-type engine at the Zevolzhye Engine Plant, and with the introduction into production of a new rear end at the Gor'kiy Motor Vehicle Plant, the load capacity of the GAZ-53 vehicle will be increased to four tons regardless of the type of road. The first industrial batch of GAZ-58 trucks, numbering several thousand, will be produced in 1963. A further development of this vehicle will be the GAZ-54 truck, which will have the same load capacity, but a more powerful engine and other boosted assemblies, permitting it to tow a trailer with a four ton load capacity (and a total weight of 6.2 tons). Plant tests of this vehicle will begin in 1963. The Gor'kiy and Saransk Motor Vehicle Plants are creating a light 3.5 ton dump-truck on the base of the GAZ-53 truck, which will be primarily intended for work in agriculture. Test models of these dump-trucks will begin plant tests. The Gor'kiy Motor Vehicle Plant will produce the first industrial batch of GAZ-66 two-ton vehicles with increased roadability (4x4).

The Moscow Motor Vehicle Plant imeni Likhachev will continue work on the creation of a family of three-axle ZIL-133

vehicles with an eight ton capacity, and will conclude plant tests of the ZIL-133V saddle prime-mover. In the design of the three-axle ZIL-133 vehicles it is planned to utilize rear ends which would be unified with those being developed by the Gor'kiy Motor Vehicle Plant for the four-ton GAZ-54 vehicle. Most assemblies on the ZIL-133 and ZIL-130 will be unified. The utilization of common rear ends on two of the most mass-produced vehicles of the Gor'kiy and Moscow Motor Vehicle Plants will be a big step towards the realization of inter-plant unification. The production of the new ZIL-130 vehicles, begun at ZIL, will continue during 1963 in greater quantities, including modifications in the form of a saddle prime-mover and a dump truck.

The Ural Motor Vehicle Plant will conclude tests of the Ural-377 three-axle eight ton trucks of the 6x4 type, and will start supplying them to the national economy as production capacities which are being built at the plant for the production of large load three axle vehicles are completed.

Last year the Minsk Motor Vehicle Plant began the production of modernized MAZ-200P (side-type) and MAZ-200M (saddle prime-mover) vehicles with new four-tact 180 hp YaMZ-236 diesel engines, produced by the Yaroslavl' Engine Plant, and some new assemblies. This year it will produce the first industrial batch of new MAZ-500 (side-type), MAZ-503 (dump-truck) and MAZ-504 (saddle prime-mover) vehicles with the cab above the engine. The Kremenchug Plant which has somewhat fallen behind the target dates set earlier for the creation of new heavy truck models, will during 1963 complete the development of designs for the KrAZ-250 12-ton truck, and of a dump truck and a saddle prime-mover on the same base, and will begin building test models. The DrAZ-258 truck train, consisting of a prime-mover and a semi-trailer with a 20 to 25 ton load capacity is being created on the base of the KrAZ-221 truck with a 240 hp YaMZ-238 engine.

The Belorussian Motor Vehicle Plant for Heavy Dump Trucks will deliver models of the 40 to 45 ton load capacity BelAZ-548 dump truck for inter-departmental testing, and will begin series production of 27-ton load capacity BelAZ-540 dump trucks which are at present successfully passing state tests. On the base of these dump trucks, the plant will develop and build models of dump-truck trains, consisting of saddle prime-movers and BelAZ-540V and BelAZ-548V dump-trailers with a load capacity of 40 and 60 tons.

The Zaporozhye Motor Vehicle Plant has designed passenger and freight economy cars of the usual (4x2) and increased roadability (4x4) type with a rear engine, on the base of the Zaporozhets economy car. In 1963 these cars will go through state tests, the results of which will determine whether it is expedient to put them into production. One can assume that

should they demonstrate adequate roadability as well as a sufficient durability and lifespan during the tests, this type of vehicle will find broad utilization in agriculture.

In the fields of creating and preparing for production new busses, work begun in 1962 will continue. So, the Likinsk Bus Plant must this year submit for state tests a new large LiAZ-677 city bus with a capacity of 80 to 105 passengers.

A medium capacity city bus which is unified with the LiAZ-677, is being built at the Kurgansk Bus Plant and will have to go through plant tests.

A model of an especially large capacity city bus with a 180 to 200 hp horizontal diesel engine, whose body will be unified with the trolley bus, will be built and submitted for state tests by the Plant imeni Uritskiy in the city of Engel's.

The PAZ-672 local communications type bus with a small capacity, increased durability and increased roadability on arched or wide tires for intra-regional passenger transportation will go through plant tests and will be submitted for state tests by the Pavlovsk Bus Plant.

At the L'vov Bus Plant state tests will be completed and the first industrial batch of LAZ-699A inter-city and LAZ-699 tourist busses produced.

In the field of specialized transport and special vehicles one should mention the 1963 plan for building models and partial testing of the modified GAZ-52, GAZ-53, ZIL-130-S, and MAZ-512 vehicles designed for use under conditions of the Far North, and of the ZIL-131 and MAZ-513, designed for use in hot climates.

Among various types of vehicles and trailers for use at construction sites, one should note the dump-truck with a metal body of the Mytishchi Machine Building Plant, and a truck train for hauling cement, consisting of a MAZ-594B saddle prime-mover and a tank semi-trailer of the Pavshinsk Mechanical Plant.

For transporting perishable goods, refrigerator vehicles are being built by the Cherkassk Refrigeration Equipment Plant on the bases of the Moskvich and MAZ-500 vehicles, by the Ul'yannovsk Motor Vehicle Plant on the base of the UAZ-451 van, and by the Lutsk Machine Building Plant on the base of the ZIL-130. Inter-departmental tests of the refrigerator semi-trailer with a six-ton load capacity, produced by the Odessa Bus Plant are being completed.

In the field of passenger cars, the plants will continue current work on proposed future models. The Gor'kiy Motor Vehicle Plant which is working on improving the design of taxis, will submit a specially modified Volga-type taxi for state tests (which must be conducted during the second quarter

of 1963). Motor vehicle plants and designers working in the field of motor vehicles are facing great tasks of raising the operating reliability and lifespan of the vehicles being produced by the plants so that their mileage before capital repairs are required could be extended. In order to fulfill this task, all plants have worked out concrete measures designed for uncovering and eliminating the weak spots in the design and for perfecting parts and assemblies which wear out quickly. There is also a provision for conducting work towards simplifying and reducing labor consumption in servicing vehicles, and towards reducing the number of lubricating points, etc.

In addition to the above listed fundamental work of creating and perfecting motor vehicles, plants of the motor vehicle industry as well as related producers, will perform a considerable amount of experimental design-testing and scientific-research work in 1963, as provided for in the plans of the Union Republics and the sovnarkhozes. This work is directed towards creating new types of specialized means of transport which are provided for in the adopted list of types, towards modernizing and perfecting the products currently being produced by the plants, and towards improving quality, reducing costs and perfecting production techniques.

Collectives of plants and scientific-research institutes of the motor vehicle industry, together with workers of motor vehicle transport, are by their creative work responding to the decisions of the November Plenum of the Central Committee of the CPSU.

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## THE BelAZ-540 DUMP TRUCK

[Following is the translation of an excerpt from an article by B. Knyaz'kov in the Russian-language magazine Avtomobil'nyy transport (Motor Vehicle Transport), Moscow, No 3, March 1963, page 43.]

In recent time designers of the Belorussian Motor Vehicle Plant have developed and built test models of new large-capacity dump-trucks and trailers.

In place of the outdated MAZ-525 dump-truck model (of the Minsk Motor Vehicle Plant), a new BelAZ-540 model, which is currently going through plant tests, has been created.

The BelAZ-540 is a two-axle 27-ton capacity dump-truck with rear axle drive. Its overall appearance is shown in Figure 1, while the basic technical data are given below.

[Note: Photographs have not been reproduced for this report.]

Own weight, in kg . . . . .	21,000
Total weight, in kg . . . . .	48,000
Distribution of truck weight among axles, in kg:	
unloaded:	
on front axle . . . . .	10,145
on rear axle . . . . .	10,855
loaded:	
on front axle . . . . .	15,590
on rear axle . . . . .	32,410
Vehicle base, in mm . . . . .	3,550
Track, in mm:	
of front wheels . . . . .	2,700
of rear wheels (between dual slope center) . . . . .	2,400
Road clearance of loaded vehicle (under rear axle housing), in mm . . . . .	
	475
Minimum turn radius in terms of outside front wheel, in mm . . . . .	
	8,320

Overall dimensions, in mm:	
length . . . . .	7,180
width (between slopes of rear axle): . . . . .	3,480
height (at platform baffle plate) . . . . .	3,350
loading height of platform (height up to sides). . . . .	3,050
Interior platform dimensions, in mm:	
length . . . . .	4,490
width:	
at front . . . . .	2,850
at rear . . . . .	3,288
Platform capacity, in cubic meters . . . . .	15.3
Time required for raising and lowering platform at 900 to 1,000 rpm of the engine crankshaft, in sec:	
raising . . . . .	25-30
lowering . . . . .	15-20
Fuel and oil capacity, in liters:	
two fuel tanks . . . . .	400
oil tank on engine . . . . .	95

It is designed for hauling rock, earth and various types of loose material during work in quarries and at construction sites.

In developing the design of the BelAZ-540 truck, broad unification of individual parts and assemblies with other large-capacity trucks of the Belorussian Motor Vehicle plant was provided.

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## THE RAF-977K VAN

[Following is the translation of an unsigned article in the Russian-language magazine Avtomobil'-nyy transport (Motor Vehicle Transport), Moscow, No 3, March 1963, page 47.]

The Riga Motor Vehicle Plant has created the RAF-977K van, designed for hauling industrial products and foodstuffs, on the base of the currently produced RAF-977D micro-bus.

The large capacity of the van body permits the transportation of large size lightweight goods.

The vehicle has a railroad car type all-metal body of a supporting design, with a closed partition separating the freight compartment from the driver's cab.

For convenient loading and unloading the freight compartment of the body has two doors; a side-one located on the right-hand side in terms of the direction of vehicle movement, and a rear one.

The doors are equipped with locks and can be sealed when closed. Special covers are provided to protect the seals against outside damage. The side door has a footstep. The floor and walls on the inside of the body (with a height of up to 710 mm from the floor) are protected by wooden planks against damage during loading or unloading.

The freight compartment is lighted by two dome lights, of which one is installed on the partition and the other on the rear door. The dome lights are automatically turned on when one of the doors of the freight compartment is opened. In addition to this, there is a further dome light switch and a warning light, signalling the unintended opening of freight compartment doors, on the instrument panel in the driver's cab.

Brief technical characteristics of the RAF-977K van are given below:

Load capacity, in kg	.	.	.	.	.	.	.	850
Weight when fully equipped, in kg	.	.	.	.	.	.	.	1,560

The van body is equipped with forced ventilation, regulated by shutters installed on the side walls of the body. The inside walls, the floor and the ceiling of the freight compartment are covered with mastic, which protects against corrosion and reduces vibration noise.